

REMARKS/ARGUMENTS

The Office Action mailed April 18, 2006, has been received and reviewed. Claims 1 through 31, and 51 through 66 are currently pending in the application. Claims 1 through 3, 9, 15, and 16 stand rejected. Claims 4 through 8, and 10 through 14 have been objected to as being dependent upon rejected base claims, but the indication of allowable subject matter in such claims is noted with appreciation. Claims 17 through 31, and 51 through 66 are allowed. Applicant has amended claims 1, 10, and 14, added new claims 75 through 84, and respectfully requests reconsideration of the application as amended herein.

35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on U.S. Patent No. 5,609,889 to Weber in View of U.S. Patent No. 5,985,185 to Steijer et al.

Claims 1 through 3, 9, 15, and 16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Weber (U.S. Patent No. 5,609,889) in view of Steijer et al. (U.S. Patent No. 5,985,185). Applicant respectfully traverses this rejection, as hereinafter set forth.

M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

The 35 U.S.C. § 103(a) obviousness rejections of claims 1, 2, 3, 9, 15 and 16 are improper because the cited references fail to teach each and every element of the claims to establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the claimed inventions.

Weber teaches a printed wiring board prepared with a heat sink attached. A mold for a transfer molding process is provided with a biased plug that exerts extra pressure on the heat sink

or printed wiring board to prevent molding compound from covering the heat sink. The finished transfer molded pin grid array is shown in FIG. 3. Electrical contacts (i.e. pins) 12 are secured in vias 11 of the molded pin grid array. (Col. 7, lines 53-60). The lower platen 23' has a plurality of recesses or cavities 51, 51A for receiving electrical contacts 12 that are used to center the substrate, therefore, "there is no need for other elements (such as alignment bumps 43 in Fig. 2) to be used for alignment purposes." (Col. 8, lines 26-34).

Steijer et al. is directed to encapsulating optocomponents with a capsule of plastic or resin material using a mould assembly. As described, the mould assembly comprises a lower mould half 1 having a mould cavity 3 and an upper mould half 17 having a mould cavity 19 (Figs. 1 and 2). The mould assembly is configured to receive a lead frame 51, which rests on shoulders 71 of mould cavity 3 (col. 6, lines 3-16). Lower mould half 1 further includes fixed guide pins 73 that are placed in holes 75 of lead frame 51 in order to keep lead frame 51 in its correct position in mould cavity 3. Both lower mould half 1 and upper mould half 17 include positioning pins 85 and corresponding holes 87 for receiving positioning pins 85, the function of which is to place the two mould halves 1 and 17 in mutually correct positions during the moulding process (Figs. 1 and 2 and col. 7, lines 57-61).

First, independent claim 1 recites the limitations of a first platen, including "*a plurality of sets of alignment elements projecting from a like plurality of mutually laterally spaced shallow recesses in a surface of the first platen, the like plurality of shallow recesses configured to receive a like plurality of electronic component assemblies.*" (emphasis added) Neither Weber nor Steijer nor any combination of Weber and Steijer teach or suggest a platen having a *plurality* of sets of alignment elements configured for engaging a *plurality* of electronic component assemblies. Rather, the mold of Weber is illustrated as having a lower platen 23' and an upper platen 22 that are configured to receive a *single* substrate 10 and electronic device 20.

Accordingly, Weber does not teach or suggest that a plurality of electronic component assemblies may be arranged over upper or lower platen 22, 23', and also does not teach or suggest alignment features of a platen configured to engage a plurality of electronic component assemblies. The mould assembly of Steijer et al. is illustrated and described as having mould halves 1 and 17 and fixed guide pins 73 that are configured to receive a *single* lead frame 51. Accordingly, Steijer et al. does not teach or suggest that a plurality of electronic component assemblies may be arranged

over mould half 1, and also does not teach or suggest sets of alignment features configured to engage a plurality of electronic component assemblies. Further, based on the foregoing, any combination of Weber and Steijer teaches or suggests the claim limitations of independent claim 1 to establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the claimed invention.

Second, claim 1 recites the limitations of the first platen, including “a plurality of sets of alignment elements projecting from a like plurality of mutually laterally spaced shallow recesses in a surface of the first platen,” and the limitations of a second platen, including “a plurality of sets of alignment element receptacles configured and positioned to respectively receive therein the plurality of sets of alignment elements with the second platen superimposed on the first platen.” Neither Weber nor Steijer nor any combination of Weber and Steijer teach or suggest a second platen having alignment element receptacles configured to receive therein alignment elements projecting from a shallow recess of a first platen. Rather, the mold of Weber includes a lower platen 23’ which has a plurality of recesses or cavities 51, 51A for receiving electrical contacts (i.e. pins) 12 of a pin grid array. The electrical contacts 12 do not project from a surface of the upper platen 22 or lower platen 23’, and are not included therewith. Rather, the electrical contacts 12 are a part of the pin grid array, as clearly depicted in FIG. 3. While the electrical contacts 12 of the pin grid array may be received into the cavities 51, 51A of the lower platen 23’ for centering the substrate in Weber, there is no teaching or suggestion of alignment elements which project from a shallow recess in the surface of a first *platen*. Steijer teaches fixed pin guides 73 protruding from a shoulder 71 of a lower mould part 1. The fixed guide pins 73 may be placed in holes 75 in a leadframe 51 in order to keep the leadframe in its correct position in the mould cavity 3, however, the upper mould half 17 (FIG. 2) does not include receptacles for receiving the fixed guide pins 73. Furthermore, Weber teaches away from the use of alignment elements. Specifically, Weber teaches “there is no need for other elements (such as alignment bumps 43 in Fig. 2) to be used for alignment purposes.” (Col. 8, lines 26-34). Accordingly, Weber teaches away from combination with the fixed pin guides 73 of Steijer. Therefore, based on the foregoing, any combination of Weber and Steijer teaches or suggests the claim limitations of independent claim 1 to establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the claimed invention.

Third, claim 1 recites the limitation, “a second platen including a plurality of component cavities *extending therethrough* at a plurality of mutually laterally spaced locations.” (Emphasis added) Neither Weber nor Steijer teach or suggest a platen having component cavities extending therethrough. Rather, the mold of Weber includes an upper platen 22 with an upper mold cavity 25 and a lower platen 23' with a lower mold cavity 27. Both the upper mold cavity 25 and the lower mold cavity 27 are formed only to a partial depth of the upper and lower platens 22, 23' (see FIG. 5). Weber teaches the upper platen and the lower platen as two separable portions of a mold used to define *enclosed* mold cavities in which molding is to occur (Col. 5, lines 52-56). Steijer teaches that both mould cavities 3 and 19 are formed into only a partial depth of mould halves 1 and 17 (Fig. 4). Forming mould cavities 3 and 19 in this manner is obviously necessary in order for the mould assembly to be able to carry out its intended function of enclosing the material for encapsulating lead frame 51. Therefore, neither Weber nor Steijer nor any combination of Weber and Steijer teach or suggest component cavities that extend *through* either the platens 22, 23' or the mould halves 1 and 17. based on the foregoing, any combination of Weber and Steijer teaches or suggests the claim limitations of independent claim 1 to establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the claimed invention.

In summary, in view of the foregoing, Applicants respectfully submit that neither Weber nor Steijer, alone or in combination, teach or suggest each and every element of claim 1, nor is there any objective reason for the combination thereof. Therefore, the references cannot and do not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the presently claimed inventions of claim 1. Accordingly, claim 1 is allowable under the provisions of 35 U.S.C. § 103(a), and Applicants respectfully request the present rejections be withdrawn.

The nonobviousness of independent claim 1 precludes a rejection of claims 2, 3, 9, 15 and 16 which depend therefrom because a dependent claim is obvious only if the independent claim from which it depends is obvious. *See In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988), *see also* MPEP § 2143.03. Therefore, the Applicant requests that the Examiner withdraw the 35 U.S.C. § 103(a) obviousness rejection to independent claim 1 and claims 2, 3, 9, 15 and 16 which depend therefrom.

Objections to Claims 4 through 8, and 10 through 14/Allowable Subject Matter

Claims 4 through 8, and 10 through 14 stand objected to as being dependent upon a rejected base claim, but are indicated to contain allowable subject matter and would be allowable if placed in appropriate independent form. New claim 75 has been written to include all of the limitations of claim 4 as well as the limitations of base claim 1 prior to the present amendments thereto. Claims 76 and 77 correspond to claims 5 and 6 and depend from claim 75. New claim 78 has been written to include all of the limitations of dependent claim 7, as well as the limitations of independent claim 1 prior to the present amendments thereto. Claim 79 corresponds to claim 8 and depends from claim 78. New claim 80 has been written to include all the limitations of dependent claims 9 and 10, as well as base claim 1 prior to the present amendments thereto. Claims 81 and 82 correspond to claims 11 and 12 and depend from claim 80. New claim 83 includes all of the limitations of dependent claim 13, as well as the limitations of independent claim 1 prior to the present amendments thereto. Claim 84 corresponds to claim 14 and depends from claim 83. Consequently, it is believed that new claims 75 through 84 are also in condition for allowance.

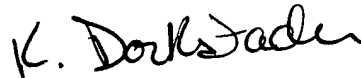
ENTRY OF AMENDMENTS

The amendments to claims 1, 10 and 14 above and new claims 75-84 should be entered by the Examiner because the amendments are supported by the as-filed specification and drawings and do not add any new matter to the application.

CONCLUSION

Claims 1 through 31, 51 through 66, and 75 through 84 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, he is respectfully invited to contact Applicant's undersigned attorney.

Respectfully submitted,



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